## Remarks

Applicant respectfully requests reconsideration of this application as amended. The specification has been amended to correct a minor informality. Claims 2, 8, 14, and 21 have been amended. No claims have been cancelled. Therefore, claims 2-6, 8-12, 4-18 and 21-25 are presented for examination.

## 35 U.S.C. §103(a) Rejection

Claims 2-6, 8-12, 14-18 and 21-25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cramer et al. (U.S. Patent No. 5,107,418) in view of Archambault (U.S. Patent No. 6,173,444). Applicant submits that the present claims are patentable over Cramer in view of Archambault.

Cramer discloses a method for representing scalar data dependencies for an optimizing compiler wherein a global scalar data dependence graph is created to represent all of the scalar objects in an entire program. More specifically, scalar data dependencies are represented by a use-definition chain, a definition-use chain, or a definition-definition chain. Also, the representation of scalar data dependencies is created for the entire program and is maintained during the entire compilation or assembly of the program. (Cramer at col. 2, ll. 5-25.)

Archambault discloses a method that reduces the size of alias sets associated with program pointers through the use of a pointer alias graph. Standard data flow gathering techniques are used to develop the pointer alias graph. The nodes in the graph represent either a definition of a pointer variable or a use of a pointer variable, and each node has an associated alias set. The initial alias sets for definition nodes is the right hand side of the pointer variable assignment operation, and the initial alias set for use nodes is the

value of the object at that execution point. Location information, the basic block number (relative to the flow graph) and position within the basic block, is saved for each node. (Archambault at col. 5, ll. 4-17).

Claim 1, as amended, recites:

> A computer-implemented method, comprising:
> assigning a definition-node for one or more definition statements in an intermediate language program;
> assigning a use-node for one or more use statements in the intermediate language program;
> assigning an alias-node for one or more aliases representing an equivalence class of memory accesses;
> introducing an edge into a dependence flow graph connecting each definition-node to the alias-node corresponding to the alias representing the equivalence class to which the definition-node belongs; and
> introducing an edge in the dependence flow graph connecting each use-node to the alias-node corresponding to the alias representing the equivalence class to which the use-node belongs,
> wherein a number of the edges in the dependence flow graph is linear to a number of the nodes in the dependence flow graph, and wherein the number of edges is independent of a definition-use structure of the intermediate language program.

Applicant submits that Cramer does not disclose or suggest a number of the edges in the dependence flow graph being linear to a number of the nodes in the dependence flow graph, and the number of edges being independent of a definition-use structure of the intermediate language program, as recited by claim 1. Applicant can find no disclosure or suggestion of such a feature anywhere in Cramer. Furthermore, applicant can find no disclosure or suggestion of such a feature in Archambault.

As neither Cramer nor Archambault individually disclose or suggest the cited feature of claim 2, any combination of Cramer and Archambault also does not disclose or suggest such a feature. Therefore, claim 2 is patentable over Cramer in view of

Archambault. Claims 3-6 and 23 depend from claim 1 and include additional limitations. Therefore, claims 2-6 and 23 are also patentable over Cramer in view of Archambault.

Claims 8, 14, and 21, as amended, each recite, in part, a number of the edges in the dependence flow graph being linear to a number of the nodes in the dependence flow graph, and the number of edges being independent of a definition-use structure of the intermediate language program. As discussed above, neither Cramer nor Archambault disclose or suggest such a feature. Therefore, claims 8, 14, and 21 are patentable over Cramer in view of Archambault for the reasons discussed above with respect to claim 1. Claims 9-12 and 24 depend from claim 8, claims 15-18 and 25 depend from claim 14, and claim 22 depends from claim 21. As dependent claims necessarily include the limitations of their independent claims, claims 9-12, 15-18, 22, 24, and 25 are also patentable over Cramer in view of Archambault.

Applicant respectfully submits that the rejections have been overcome and that the claims are in condition for allowance. Accordingly, applicant respectfully requests the rejections be withdrawn and the claims be allowed.

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Applicant respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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